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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO	
10/669,817	09/24/2003	John A. Webster	BG-4114/1086.023D	6988	
7590 08/22/2005			EXAM	EXAMINER	
Richard L. Sampson			ELEY, TIMOTHY V		
Sampson & Ass 50 Congress Str			ART UNIT	PAPER NUMBER	
Boston, MA 02109			3724		
			DATE MAILED: 08/22/200	DATE MAILED: 08/22/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

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Examiner Art Unit		Application No.	Applicant(s)				
Timothy V. Eley 3724		10/669,817	WEBSTER, JOHN A.				
The MALING DATE of this communication appears on the cover sheet with the correspondence address — Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ② MONTH(S) FROM THE MALING DATE OF THIS COMMUNICATION. Editablesia of the many be available under the proteins of 3 CFR 1.13(lo). In no event, however, may a reply be finely flied Ethic period for reply specified above it less than thinty (30) stays, a negly with the statisticy pression will appeal and it is pressive to the period for reply specified above it less than thinty (30) stays, a negly with the statisticy pression will appeal and it is pressive to the continuation of the statisticy pression will appeal and it is pressive to the continuation of the statisticy pression will pressive the pression of the statistic pression will pression to score ABANCORED (30 4.9. ≤ 1.33). Any supply received by the Office later than three months after the malling date of this communication, even if flundy flick, may reduce any search planet term deplusivenest. Set 37 CFR 1.70(4b). Status 1) ② Responsive to communication(s) filled on 01 August 2005. 2a) □ This action is FINAL. 2b) ② This action is non-final. 3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) ② Claim(s) 1.20 is/are pending in the application. 4) ② Claim(s) 1.20 is/are allowed. 6) ② Claim(s) 1.30 and 1.31 is/are rejected. 7) ② Claim(s) 3.13 and 1.31 is/are clayed to . 8) □ Claim(s) 3.13 and 1.31 is/are clayed to . 8) □ Claim(s) 3.13 and 1.31 is/are clayed to . 9) □ The specification is objected to by the Examiner. 10) ☑ The drawing(s) filled on 24 September 2003 is/are: a) ☑ accepted or b) □ objected to by the Examiner. Application Papers 9) □ The specification is objected to the three communication is required if the drawing(s) is objected to by the Examiner. 10) ☑ The drawing(s) filled o	Office Action Summary	Examiner	Art Unit				
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ③ MONTH(S) FROM THE MALLING DATE OF THIS COMMUNICATION. A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ③ MONTH(S) FROM THE MALLING DATE OF THIS COMMUNICATION. After SX (6) MONTHS from the malling date of this communication. If the period for expl specified date is less than their (y) days, a respl which the statistory maintains of thing (20) days will be considered timely. Finally first or explored and the communication is the period of the perio		· · · · · · · · · · · · · · · · · · ·					
THE MAILING DATE OF THIS COMMUNICATION. - Extensions of the map be available under the provides of 3 or PR 1.13(d). In no event, however, may a reply be timely filed after 5X (6) MCNTHS from the making date of this communication. - It NO periods for reply is specified above, the maximum statutory period within the statutory intrinsicent (100 MCNTHS) from the making date of this communication. - Pallower for reply is pecified above, the maximum statutory period with apply and will expect (50) (9) MCNTHS the making date of this communication. - Pallower for reply intrinsicent the making date the making date of this communication, even if timely filed, may reduce any example part term edipathent. See 57 CFR 1.79(4): - Status 1 Responsive to communication(s) filed on 01 August 2005. 2a) This action is FINAL. 2b) This action is non-final. 3 Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4 Claim(s) 1-20 is/are pending in the application. 4a) Of the above claim(s) 7 and 15-20 is/are withdrawn from consideration. 5 Claim(s) 1-20 is/are allowed. 5 Claim(s) 3.13 and 1.1 is/are objected to. 8 Claim(s) 3.33 and 1.1 is/are objected to. 8 Claim(s) 3.33 and 1.1 is/are objected to. 8 Claim(s) 3.33 and 1.1 is/are objected to. 9 The specification is objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTC-152 Priority under 35 U.S.C. § 119 12 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of the priority documents have been received in							
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DETAILED ACTION

Specification

1. Applicant should note the disposition of U.S. Patent Application Ser. No. 10/206,026, which is now U.S. Patent No. 6,669,118, in the specification.

Claim Objections

2. Claim 3 is objected to because "said determining . . . operation" is awkwardly worded. Exactly how is the flowrate determined?

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 4. Claims 1,2,3,5,6,10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell.
 - Campbell discloses a method for delivering a coherent jet of grinding coolant to a grinding wheel(10) being rotated at a selected peripheral wheel speed in a grinding operation, the method comprising; inherently determining a desired flowrate of coolant for the grinding operation; inherently determining coolant pressure required to generate a coolant jet speed approximately equal to the peripheral wheel speed at the coolant

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flowrate; inherently determining a nozzle discharge area capable of achieving the coolant jet speed; and providing a nozzle assembly for delivery of a coherent jet of a grinding coolant at the coolant jet speed, wherein the nozzle assembly comprises a plenum means(inherently for producing a pressurized jet) and at least one nozzle(18), the nozzle comprising an axis(which does not have to be in the center of the nozzle), a proximal end having a maximum dimension D, and a distal end portion containing the nozzle discharge area having a longitudinal cross-section of dimension d; the distal portion having a surface disposed at an angle of at least 30 degrees relative to the axis(since an axis may be used which is tilted), and the nozzle characterized by a D:d ratio of at least about 2:1. See figure 1, column 2, lines 1-18, and lines 65-end to column 3, lines 1-23.

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- Regarding claim 2, the inherently determining a desired flowrate comprises using a width of the grinding zone. See column 3, lines 5 and 6.
- Regarding claim 3, inherently some power will be consumed as the flowrate is determined as vague recited by applicant.
- Regarding claim 5, the nozzle may be considered to have an asymmetrical cross-section depending upon where the axis is located.
- Regarding claim 6, the nozzle has a rectangular transverse crosssection. See column 5, lines 9-12.

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• Regarding claim 10, as seen in figure 1, the ratio D:d is clearly less than or equal to 4:1.

 Regarding claim 11, inherently any plenum or pump for applying pressure for creating the jet will be a "chamber".

Claim Rejections - 35 USC § 103

- 5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell.
 - Campbell is explained above.
 - Campbell does not disclose a plenum chamber, which comprises a modular front plate removably fastened to a downstream side of the plenum chamber.
 - However, as stated above, any plenum or pump for applying pressure for creating the jet will be a "chamber", and to make portions of the chamber removable for cleaning inside the "chamber" it would have been obvious to one having ordinary skill in the art at the time the invention was made.
- 7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell in view of Hill et al(6,123,606).
 - Campbell is explained above.

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- Campbell does not disclose determining coolant pressure comprises determining a number and pitch of nozzles.
- However, Hill et al disclose that it is known to use one or two nozzles for cooling the peripheral surface of a grinding wheel.
 See column 3, lines 27-31.
- Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of Campbell by determining a number and pitch of nozzles since Hill et al discloses that two nozzles may be used to replace one nozzle incapable of adequately cooling the peripheral surface of the grinding wheel.
- 8. Claims 1-3, and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazui et al(5,390,446) in view of Morris(3,104,826).
 - Kazui et al discloses a method for delivering a coherent jet of grinding coolant to a grinding wheel(1) being rotated at a selected peripheral wheel speed in a grinding operation, the method comprising; inherently determining a desired flowrate of coolant for the grinding operation; inherently determining coolant pressure required to generate a coolant jet speed approximately equal to the peripheral wheel speed at the coolant flowrate; inherently determining a nozzle discharge area capable of achieving the coolant jet speed; and providing a nozzle assembly for delivery of a coherent jet of a grinding coolant at the coolant jet speed, wherein the nozzle assembly comprises a

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plenum means(inherently for producing a pressurized jet) and at least one nozzle(12). See figure 7, column 2, lines 1-4, column 6, lines 53-60, column 7, lines 29-43, and column 8, lines 13-24.

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- Kazui et al does not disclose that the nozzle comprise an axis, a proximal end having a maximum dimension D, and a distal end portion containing the nozzle discharge area having a longitudinal cross-section of dimension d; the distal portion having a surface disposed at an angle of at least 30 degrees relative to the axis, and the nozzle characterized by a D:d ratio of at least about 2:1.
- Morris discloses a nozzle for supplying a coolant in a grinding (cutting) operation, the nozzle comprising an axis, a proximal end having a maximum dimension D, and a distal end portion containing the nozzle discharge area having a longitudinal crosssection of dimension d; the distal portion having a surface disposed at an angle of at least 30 degrees relative to the axis, and the nozzle characterized by a D:d ratio of at least about 2:1. See figure 1, and column 1, lines 9-20.
- Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of Kazui et al by replacing the nozzle(12) used therein with the nozzle disclosed by Morris in order to provide more effective cooling of the grinding wheel.

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 Regarding claim 2, inherently determining a desired flowrate will comprise using a width of the grinding zone since the total periphery of the grinding wheel should be cooled.

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- Regarding claim 3, inherently some power will be consumed as the flowrate is determined as vague recited by applicant.
- Regarding claims 8 and 9, the nozzle of Morris comprises a medial portion having a radius of curvature of at least about 1.5D and an axial length of 3/4D and a cylindrical cross-section.
- Regarding claim 10, as seen in figure 1 of Morris, the ratio D:d
 is clearly less than or equal to 4:1.
- Regarding claim 11, inherently any plenum or pump for applying pressure for creating the jet will be a "chamber".
- Regarding claim 12, Kazui et al does not disclose a plenum chamber, which comprises a modular front plate removably fastened to a downstream side of the plenum chamber. However, as stated above, any plenum or pump for applying pressure for creating the jet will be a "chamber", and to make portions of the chamber removable for cleaning inside the "chamber" it would have been obvious to one having ordinary skill in the art at the time the invention was made.
- 9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazui et al in view of Morris as applied to claim 1 above, and further in view of Hill et al.
 - Kazui et al, as modified, is explained above.

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 Kazui et al, as modified, does not disclose determining coolant pressure comprises determining a number and pitch of nozzles.

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- However, Hill et al, as explained above, discloses that it is known to use one or two nozzles for cooling the peripheral surface of a grinding wheel. See column 3, lines 27-31.
- Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have further modified the method of Kazui et al by determining a number and pitch of nozzles since Hill et al discloses that two nozzles may be used to replace one nozzle incapable of adequately cooling the peripheral surface of the grinding wheel.

Allowable Subject Matter

10. Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

- 11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - The cited prior art discloses cooling of nozzles.
- 12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy V. Eley whose telephone number is 571-272-4506. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N. Shoap can be reached on 571-272-4514. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Timothy V Eley Primary Examiner Art Unit 3724